

## Collaborating on Off-Grid Productive Use of Energy

An interactive roundtable session jointly convened by InfraCredit and FCDO for key stakeholders in Nigeria's off-grid renewable energy sector to foster meaningful collaboration, share insights, and develop integrated strategies that maximize the impact of investments across agriculture, energy, and finance sectors.



### Background

InfraCredit and the Foreign, Commonwealth & Development Office (FCDO) jointly hosted a stakeholder roundtable focused on scaling the productive use of energy (PU) within Nigeria's off-grid renewable energy sector. The roundtable provided a platform for financiers, developers, and ecosystem partners to explore practical solutions for stimulating energy demand, enhancing mini-grid sustainability, and driving rural economic development. The use of off-grid productive energy as a demand stimulation tool has gained traction, especially with the launch of the \$750 million World Bank-funded Distributed Access through Renewable Energy Scale-up (DARES) programme.

DARES embeds productive use strategies into developers' project approaches, creating new opportunities for integration across agriculture, energy, and finance sectors. In parallel, over \$1 billion in private sector capital is being mobilized for off-grid productive use, unlocking unprecedented

financial resources for the sector. While significant vertical coordination exists around funding mobilization, there remains a need for greater horizontal collaboration — ensuring stakeholder strategies, understanding, and delivery mechanisms are more integrated and coherent. This roundtable marks an initial step towards fostering a more connected ecosystem that can jointly address barriers, share insights, and synergize efforts in scaling productive use interventions. Building on the leadership FCDO has demonstrated in advancing Nigeria’s off-grid energy sector, this roundtable aims to deepen collaboration, knowledge sharing, and strategic alignment to accelerate the deployment of productive use solutions at scale.

## Strategic Objective

The roundtable aimed to provide a holistic and integrated perspective for stakeholders to collaboratively advance off-grid productive use of energy solutions in Nigeria. It sought to stimulate the development of a supportive ecosystem for knowledge exchange, learning, and a community of practice.

Specifically, the discussions aimed to:

- Understand the opportunities and threats facing the off-grid productive use sector, including those beyond the traditional boundaries of the agriculture, energy, and finance nexus;
- Identify potential cross-sectoral pathways to unlock economic growth through productive use of energy;
- Highlight areas where further work, evidence generation, and research are needed to inform investment strategies and policy decisions that can accelerate the scaling of off-grid productive use markets.

## Participants

The session had 30 participants across 12 organizations comprising financiers, development partners, developers and service providers

### PARTICIPANTS



## Summary of Feedbacks from Pension Funds

### 1. Strategic Planning is Foundational

- **Thorough early planning is critical.** Developers and financiers must co-develop the value chain from the outset, rather than treating productive use (PU) as an afterthought.
- **Site assessment must go beyond available energy capacity.** Many sites utilized less than 40% of installed capacity because productive use appliances destabilized the system.
- **Original Equipment Manufacturer (OEM) engagement is crucial.** OEMs should design appliances specifically for solar power, considering different performance characteristics from fossil-fuel-based equipment.

### 2. Financing Productive Use: Challenges and Approaches

- High-front costs remain a barrier. For example, solar irrigation is significantly more expensive upfront than traditional diesel systems, even if lifetime economics are favorable.
- PU projects must demonstrate viable economic returns. Investments need to stimulate sufficient economic activity to generate liquidity for repayment.
- Mini-grid developers face financial constraints. Many developers lack the balance sheet capacity to finance Productive Use solutions themselves.
- Institutional financing models are needed. Moving from project-based to institutional models can better attract development and private capital to de-risk investments.
- Aggregation is key. Upstream capital providers who have access across the value chain can play a pivotal role in financing partners who, in turn, finance Productive Use deployments.

### 3. Deployment and Adoption of Productive Use Solutions

- Solutions must fit local realities. Broader contextual factors, like government policies (e.g., rice production priorities), seasonality, and specific crop economics heavily influence Productive Use viability.
- Not all PU opportunities are immediately viable. For instance, diesel appliances remained dominant until recently because solar alternatives were not competitive enough.
- Cold storage, electric milling, and palm oil processing have shown promise in previous PU programs.

- Software and ecosystem partnerships can aid adoption. Platforms offering catalogs of vetted appliances and partnerships with agricultural experts (e.g., Okra, Afrimash, One Acre Fund) help bridge knowledge gaps.

#### **4. Operations, Maintenance, and After-Sales Service**

- Maintenance proximity is a major challenge. Rural communities are too small to justify permanent O&M staff; maintenance needs must be integrated into planning.
- Sustainable operations require committed OEM partners who are willing to iterate, improve appliances, and actively engage in the deployment ecosystem.
- Data on appliance performance and usage must be systematically collected and analyzed to refine future deployments.

#### **5. Building Institutional and Ecosystem Capacity**

- **Risk capital from development partners remains important.** “Learning by doing” still requires patient, flexible funding to drive progress.
- **Technical assistance for PU activities is critical.** Institutional TA ensures that knowledge and best practices are embedded, rather than lost after pilot programs end.
- **Defining productivity clearly is essential.** Detailed value chain analyses can identify specific value-adding activities to better target PU interventions.
- **Venture building is needed to grow the PU ecosystem.** Support nascent companies focused on PU technologies to build investable businesses.

#### **Next Steps: Strengthening Collaboration and Knowledge Sharing**

- **Promote cross-partner collaboration.** Leverage mini-grid sites located near other financiers’ PU programs to develop joint initiatives.
- **Establish shared due diligence platforms.** Develop common dashboards to track developer performance, monitor M&E outcomes, and consolidate due diligence findings, saving time and reducing redundancy.
- **Create centralized knowledge repositories.** Build databases to capture pilot learnings, appliance performance data, and best practices, enabling faster and more informed sector growth.
- **Formalize partnerships through MOUs.** Encourage alignment and coordination among stakeholders by signing MOUs that outline commitments to information sharing and collaborative action.



STAKEHOLDERS  
**ROUND TABLE  
DISCUSSION**